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CURRENT LITERATURE

BOOK REVIEWS

The Bonn Textbook

A new English edition[1] of this well-known textbook may be made the occasion to refer to the contrast between German and American instruction in botany. It is perhaps safe to say that the *Bonn textbook* is the most extensively used text in Germany, and that in its English translation it dominates in American colleges. And yet, from the American standpoint it is more a book of reference than a textbook in the usual sense. Its organization and its demands are peculiar to the German mind and the German system of education. To divide a book into "general botany" and "special botany," and especially to discover that these titles are arbitrary rather than significant, suggest some rigid, old-fashioned curriculum rather than a logical presentation. "General botany" that includes no contact with the great groups, no basis for the evolution of the plant kingdom, no large conception of any kind, is surely a misnomer. It is made to include "morphology," a morphology that does not consider the development of groups, which means a long-abandoned morphology. Then this morphology (170 pp.) is divided into "external morphology" and "internal morphology" (subtitle "histology and morphology"). The "external morphology" is really the old type, when "flowering plants" furnished almost the only material of botany. It is not a question as to the accuracy of the facts, or to their importance, but simply a question of organization. Such an organization does not represent the development of botanical science today, and it does harm if it leads the student to a misconception of the content of the great divisions of botany. Nor is the organization and presentation of this so-called "morphology" its only antique flavor; for when one finds in the textbook sections on the "metamorphosis" of shoots, of leaves, of roots, he wonders why this point of view has never been changed.

The section on physiology (153 pp.) by the late Dr. NOLL is in the main an excellent and well-ordered presentation of the facts, though here and there it has not been revised to date. Thus, the fable of the ant plants still appears with all its frills (p. 235), and the physics of absorption is decidedly antique. The peculiarity of this section most open to criticism is the remarkably vitalistic attitude of the author. To say that "any attempt to explain vital phenomena solely by chemical and physical laws could only be induced by a false conception of their real significance and must lead to fruitless results," is to decry all investigation; for that is just what every physiologist in the twentieth century is doing. That "physical attributes . . . . can never explain qualities like nutrition" is a bold prophecy and a most discouraging one, though we be yet far from that goal. "Strictly physical and chemical processes" are contrasted with "strictly vital" ones, in that with the latter it "becomes impossible to predict what effect a particular cause will produce." True; but only because we do not know enough. NOLL disclaims "vital force" in terms, but constantly writes as though it were a necessary assumption.

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[1] STRASBURGER, E., NOLL, F., SCHENCK, H., KARSTEN, G., A text-book of botany. Third English edition, revised with the eighth German edition, by W. H. LANG. pp. x+746. *figs. 779*. London: Macmillan & Co. 1908.

The second part, entitled "Special botany," is doubtless the part of the book that gives it its deserved rank among texts. It is really and dominantly modern morphology as to facts, but not in spirit. It is a well-selected thesaurus of morphological information, in using which one feels a certain measure of confidence, and this is what has made the book indispensable. But the controlling spirit of morphology is lacking, because there is no conception of continuity in the plant kingdom. To an American teacher of botany this means that the facts are dumped down in piles, with no attempt to use them in the organization of a structure. It is good science, but poor teaching; and that seems to be the general method of instruction in German universities. This is not intended as a criticism, but merely as the statement of a distinction.

"Special botany" comprises "Crytogams" and "Phanerogamia." Note the incongruous forms of the two names, and the perpetuation of the old notion that a great chasm is fixed between cryptogams and seed-plants. Through the cryptogams and gymnosperms and the introductory part of angiosperms one breathes, for the most part, the atmosphere of modern morphology; but after that there are 170 pages dealing with the details of the classification of "Monocotylae" and "Dicotylae." And here comes a demand on the German student that fills the American teacher with amazement. It simply means that students in medicine and pharmacy are driven into these courses in botany; that it is supposed to be good for them to digest this encyclopedic information about groups of plants; that the German professor of botany cannot dispense with the fees of these students; and that all German textbooks on botany must contain this dreary waste of pages. We would suggest that this German educational necessity should not appear in the English translations, for it needlessly enlarges the book for American use.—J. M. C. and C. R. B.

Plant anatomy

Under this title STEVENS has written a book[2] which deals with the development and functions of plant tissues. Structure and function are so intermixed, and rightly, that there is no anatomical part of the book as distinct from the

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[2] STEVENS, WILLIAM CHASE, Plant anatomy, from the standpoint of the development and functions of the tissues, and handbook of micro-technic. pp. xii+348. *figs. 136.* Philadelphia: P. Blakiston's Son & Co. 1907. $2.